

ABSTRACT OF THE DISCLOSURE

An integrated network element includes the functions of multiple Ring add-drop-multiplexers and a digital cross connect. A user may provision cross connections between input and output path-level units of bandwidth referred to herein as "logical tributaries." Each port within the integrated network element may be combined with one or more other ports to form a user-provisioned association of optical interface ports that is used for line protection (or SDH multiplex section protection) in a particular type of network configuration, referred to as a "port protection group". Each port within a port protection group may have a plurality of logical tributaries associated with it. By allowing a user to provision cross connections between logical tributaries, rather than directly between ports, an integrated network element in accordance with the principles of the present invention permits a user to provision working and protection paths from any port to any other port in the integrated network element without requiring the user to know the details, such as switching status, whether a port associated with a particular port tributary is a member of a port protection group, what type of port protection group a port tributary is a member of, the state of protection switching, or other such details. A user interface allows a user to provision the behavior and report the results of path-level signal monitoring (for faults and performance) and of path-level protection switching.